

Notice of Allowability

Application No.

09/939,231

Examiner

Tuan A Tran

Applicant(s)

SENARATH ET AL.

Art Unit

2682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/10/2000.
2. ☒ The allowed claim(s) is/are 1-8 and 13-35 renumbered 1-31.
3. ☒ The drawings filed on 24 August 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

EXAMINER'S AMENDMENT

The Applicant reserves the right to file a divisional application for claims 9-12.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The Application has been amended as follows:

IN THE SPECIFICATION:

After the title, please Enter as follows:

"CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of U.S. Patent Application Serial Number 09/710,085, filed on November 10, 2000, the contents of which are hereby incorporated by reference into this application as if set forth herein in full."

Authorization for this examiner's amendment below was given in a telephone interview with Mrs. Leslie Kinsman (Reg. 45,291), the assigned attorney of the application, on November 29, 2004.

The Application has been amended as follows:

IN THE ABSTRACT:

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Line 11, delete "If the invention is practiced with a TDM, ..., and the other half of the frequencies serve mobile units located within sub-areas G21, G22, G23 and G24".

IN THE CLAIMS:

Claims 9-12 have been cancelled.

Allowable Subject Matter

1. Claims 1-8 and 13-35 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claims 1-8, the closest prior art to the claimed subject matter is Tong et al. (2001/0034236). Tong discloses a wireless communications system comprising: at least four beam formers arranged within a cellular communications network, the beam formers including a first beam former for transmitting into a first area, a second beam former for transmitting into a second area, a third beam former for transmitting into a third area and a fourth beam former for transmitting into a fourth area; and a switching center for controlling signals transmitted from the at least beam formers to a plurality of user terminals in four areas such that transmission to the adjacent areas do not occur during the same time intervals. However, none of prior arts of record shows each of the first, second, third and fourth beam area are divided into at least two sub-areas such that the first beam area includes sub-areas G11 and G12, the second beam area includes sub-areas G12 and G22, the third beam area includes sub-areas G13 and G23, and the fourth beam area includes sub-areas G14 and G24 and wherein during a first time period, simultaneous transmissions are made for receipt by mobile units

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located within sub-areas G11, G12, G13 and G14; during a second time period, transmissions are made for receipt by mobile units located within sub-areas G21 and G24; and during a third time period, transmissions are made for receipt by mobile units located within sub-areas G22 and G23.

Regarding claims 13-35, the closest prior art to the claimed subject matter is Tong et al. (2001/0034236). Tong discloses a wireless communications system comprising: at least four beam formers arranged within a cellular communications network, the beam formers including a first beam former for transmitting into a first area, a second beam former for transmitting into a second area, a third beam former for transmitting into a third area and a fourth beam former for transmitting into a fourth area; and a switching center for controlling signals transmitted from the at least beam formers to a plurality of user terminals in four areas such that transmission to the adjacent areas do not occur during the same time intervals and coding signals for receipt by a particular user terminal based on its own channel quality . However, none of prior arts of records shows each of the beams are divided into at least two sub-areas and coding signals of each beam for receipt by a particular mobile unit based upon which sub-area the particular mobile unit is located within.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

- Searle (6,397,082) discloses beamed antenna system.
- Lopes et al. (6,453,176) discloses antenna array system.

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- Schlekewey et al. (6,181,276) discloses sector shaping transition system and method.
- Eswara et al. (6,597,927) discloses narrow beam traffic channel assignment method and apparatus.
- Ward et al. (6,167,286) discloses multi-beam antenna system for cellular radio base stations.
- Feuerstein (6,070,090) discloses input specific independent sector mapping.
- Solondz et al. (6,314,305) discloses transmitter/receiver for combined adaptive array processing and fixed beams switching.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan Tran** whose telephone number is **(703) 605-4255**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Vivian Chin**, can be reached at **(703) 308-6739**.

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Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

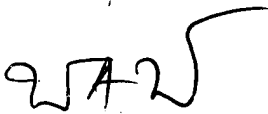
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

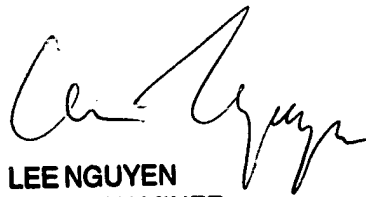
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.



Tuan Tran

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LEE NGUYEN
PRIMARY EXAMINER

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